Day-to-day variabilities of the auroral E-region neutral wind

Satonori Nozawa [1], Asgeir Brekke [2]

[1] STEL, Nagoya Univ, [2] The Auroral Observatory

Based on 84-days of data sets obtained by EISCAT CP-1 occurring the period of January 1987 to August 1998 were analyzed in terms of day-to-day variabilities of the auroral E-region neutral wind. The EISCAT UHF radar is able to derive neutral wind velocities in the auroral E-region using three methods: tristatic method, monostatic method, and field-aligned method. Comparison of the three methods based on EISCAT special program data indicated that the field-aligned method has significant advantages compared to the other two methods. In this study, by using the field-aligned method, mean and tidal components of the auroral E-region neutral wind are derived and their day-to day variabilities are examined.

Based on 84-days of data sets obtained by EISCAT CP-1 occurring the period of January 1987 to August 1998 were analyzed in terms of day-to-day variabilities of the auroral E-region neutral wind. The EISCAT UHF radar is able to derive neutral wind velocities in the auroral E-region using three methods: tristatic method, monostatic method, and field-aligned method. Comparison of the three methods based on EISCAT special program data indicated that the field-aligned method has significant advantages compared to the other two methods. In this study, by using the field-aligned method, mean and tidal components of the auroral E-region neutral wind are derived and their day-to day variabilities are examined.